

CLAIMS

What is claimed is:

1. A fluorescence electronic endoscopic system, in which excitation light (for example, blue light) and other light (for example, green and red light) are alternately projected to an object under observation, the emitted fluorescence (for example, yellow light) is received by one channel (for example, a blue channel) out of three channels by disposing before a black-and-white CCD a barrier filter which cuts all excitation light but passes all other light, the light other than the excitation light is received by the other two channels (for example, green and red channels) to capture the background image, the signals sent through the three channels are combined, and the fluorescent image is superimposed on the background image on a monitor.
2. A fluorescence electronic endoscopic system according to Claim 1, in which an adjuster filter which passes lot of excitation light (for example, blue light) and to some extent other light (for example, green and red light) is inserted between the light source and observed object to function to adjust color and brightness of the background image so that when the fluorescent image is superimposed on the background image on a monitor, a sharp fluorescent image of bright field of view is formed.
3. A fluorescence electronic endoscopic system able to perform fluorescence endoscopy without disposing a barrier filter before a CCD, in which excitation light (for example, blue light), and light adjusted by an adjuster filter passing a lot of excitation light and to some extent other light (for example, passing a lot of blue and to some extent green and red light) are alternately projected to an object under observation, the emitted fluorescence (for example, yellow light) is received by one channel of a color CCD (for example, a red channel) which does not react with excitation light but with the fluorescence, the light adjusted by the adjuster filter is received by the other two channels (for example, green and blue channels) to capture the background image, the signals sent through the three channels are combined, and the fluorescent image is superimposed on the background image on a monitor.
4. A fluorescence electronic endoscopic system able to perform fluorescence endoscopy by fluorescein sodium, in which a disc containing a primary blue, green and red filter is rotated in front of a white light source to create three primary color lights to be alternately projected to an object under observation, a light balancing blue filter which passes a lot of blue light and to some extent green and red light is inserted between the light source and the

object to function as an adjuster filter, the emitted yellow fluorescence light is received by the blue channel by disposing before a black-and-white CCD a barrier filter which cuts blue light but passes all other light, green and red light whose strengths are weakened by the adjuster filter are received by the green and red channel respectively to capture the background image, the signals sent through the three channels are combined, and the fluorescent image is superimposed on the background image on a monitor.

5. A fluorescence electronic endoscopic system able to perform fluorescence endoscopy by fluorescein sodium without disposing a barrier filter before a CCD, in which a disc containing a frame of a primary blue filter functioning as an exciter filter and two frames without filters, is rotated in front of a white light source, a light balancing blue filter which passes a lot of blue light and to some extent green and red light is inserted between the light source and the object to function as an adjuster filter, at the time when the exciter filter comes in front of the light source and the object under observation is activated to emit yellow fluorescence, the fluorescence is received by the red channel of a color CCD which does not react with excitation blue light but with the yellow fluorescence, the background image is captured by the blue and green channels at the time when the frames without filters come in front of the light source, the signals sent through the three channels are combined, and the fluorescent image is superimposed on the background image on a monitor.